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ABSTRACT

This practicum studies the future educational and/or occupational plans of 223 technical program students enrolled in Brevard Community College (BCC) during the Fall 1973 term in order to suggest adjustments in college procedures to facilitate student transition to continued college or to their chosen professions. The characteristics of technical program students, their employment opportunities, and the general characteristics of community college technological programs in Florida are described. Reference is made to the similarity of engineering and engineering technician programs and the emerging controversy between the two disciplinines. Of the 223 respondents, 136 (58 percent) indicated plans to earn the Associate of Science degree. Students' future plans show 39 percent seeking employment only, 34 percent seeking part-time employment while they continue college, and 27 percent planning to attend college full-time. Twenty-eight percent indicated an interest in attending Florida Technical University (FTU) and obtaining the Bachelor of Engineering Technology (BET) degree. As a result of the study, a junior year BET fore curriculum was established at the FTU Residence Center located on the BCC Cocoa Campus, with plans being formulated for senior year curriculum as well. Additional recommendations are also made. (Author/AH)

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AN ASSESSMENT OF FUTURE EDUCATIONAL AND OCCUPATIONAL PLANS FOR BREVARD COMMUNITY COLLEGE TECHNICAL PROGRAM STUDENTS

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PURPOSE OF STUDY

The purpose of this practicum will be to assess the future educational and/or occupational plans of technical program students at Brevard Community College and to suggest adjustments in college procedures so as to facilitate student transition to continued university study or their chosen occupation.

BACKGROUND AND SIGNIFICANCE OF STUDY

In recent years, community colleges have been the leader among educational institutions which offer occupational type programs for post-secondary students. These programs, which culminate with the Associate of Science degree, are designed to prepare competent and highly trained personnel who will be ready to enter industry. Traditionally the two year technical level programs at the community college have been considered as terminal preparation for direct employment. Because of this, technical program students do not struggle with pre-professional or general education subjects prior to enrolling in occupational specialty classes. However, an increasing body of knowledge, as well as pressures exerted by peers, parents and society have generated student interest in obtaining the baccalaureate degree(12:2). Within the last decade several major Florida universities have initiated programs which lead to the four year Bachelor of Engineering Technology degree. These programs are generally, although not exclusively, an extension of the two year Associate of Science degree programs offered in the community college. In either case these Engineering Technology degree programs offer new opportunities for the educational and career advancement of technical oriented students. It goes without saying that educational institutions should be aware of the future plans of their students in order to organize curriculum and meet student needs. A simple way to develop such an awareness is by a survey of the student population.

The influence of technology on our society as well as its impact on the life of the individual has been well documented. It is obvious that much of our current way of life depends on, or is the result of, technological innovation. There is no question but that technology is certain to play a central role in the future of the entire world. Therefore, it becomes important for educational institutions, who prepare technicians and technologists, to be as concerned for the needs and plans of their students as they are of the needs for industry and society.

DEFINITIONS FOR TERMS AND ABBREVIATIONS

Technical Program Students - those students enrolled in a community college course of study designated as a technical level program which culminates with the Associate of Science degree.

Engineering Technicians - students who complete the two year, community college, degree programs and/or are employed at the technical level of their occupation.

Engineering Technologists - students who have completed the four year engineering technology program offered at the university level and who are employed as engineering technologists.

Bachelor of Engineering Technology Programs - programs offered by four year universities. These programs are usually located within the university engineering college and consist of either a two-plus-two arrangement or a four year plan. The two-plus-two plan is designed to accept graduates of community college technical programs.

Occupationally Oriented Student - one interested in developing specific skills and knowledge in a specialized career field, as opposed to those who enter the general education and pre-professional curriculums. This term is used interchangeably with that of technical program students.

BCC - Brevard Community College, Cocoa Campus

FTU - Florida Technological University

FTU Resident Center - The resident center for Florida Technological University which is located on the Cocoa Campus of Brevard Community College.

BET - Bachelor of Engineering Technology degree programs offered by four year universities.

CHARACTERISTICS OF ASSOCIATE OF SCIENCE DEGREE PROGRAMS IN FLORIDA COMMUNITY COLLEGES

Among the basic assumptions for establishing technical level programs at the community colleges was a need to meet the great demand for technicians in our society. Other educational systems have

appeared as inflexible and unable to adopt or to meet this need. Patricia Cross (2:1) writes:

> Our national commitment to universal post-secondary education has brought us face-to-face with the reality that we must educate youth for life in a society where knowledge is exploding, semi-skilled and unskilled jobs are disappearing and most of the population will have to run just to stay in place with the demands for new skills.

The community college, with its broad curriculum offerings and open door admissions, represent a positive alternative to the restricted admissions which are associated with traditional institutions. Most of Florida's community colleges offer a wide range of technical level programs (see appendix for complete list) with the following general characteristics regarding educational and employment objectives (3:10).

Educational Objectives:
Emphasis is placed on specialized skill development and acquiring technical knowledge. Each technical studies program includes a general body of knowledge with these guidelines:

27%--Knowledge (theory) courses
27%--Skill (laboratory) courses
25%--Related (applied) courses
21%--General education courses

Upon the satisfactory completion of a technical studies program the student is awarded an Associate of Science degree.

Employment Objectives:
Programs of technical studies are designed primarily to prepare students for work in that occupational area between the professional employee and the skilled worker. The technician, employed at the semi-professional level and often in a mid-management capacity will work in close support of the professional employee.

CHARACTERISTICS OF TECHNICAL PROGRAM STUDENTS

There appears to be several distinguishing characteristics of those students who enter technical programs at Brevard Community College. While it is desirable that their previous education should have prepared them with adequate math, science, and English skills, so that they might compete with the equivalent of the upper one-third percentile of high school graduates, many do not test out at this level. However, the majority of BCC technical students are adults above the age of twenty-two, and have practical field experience which compensates somewhat for their formal educational gaps. The experience of this author, in dealing with technical program students, indicates that they are very interested in learning and applying their skills to a specific field of technology rather than absorbing general theoretical concepts in a pre-professional curriculum. Cross (2:3) has developed a list of seven common characteristics for occupationally oriented students to create a stereo-type picture of the technical program student in community college:

1. They are usually first generation college students
2. Their parents are likely to engage in skilled and unskilled occupations
3. Their parents are likely to fall in low socio-economic groups
4. Men students generally score lower on standardized tests of academic ability than do men in college parallel programs. Women show little difference in their scores.
5. They are likely to have had occupational courses in high school
6. They are generally interested in concrete and tangible goals rather than status, achievement, and social respectability.
7. They most likely place value on grades in school and on money in the job--rather than on learning for its own sake and for opportunity to be creative in a job.

CHARACTERISTICS DESIRED FOR TECHNICAL PROGRAMS TEACHING FACULTY

The success of technical programs must be shared with the instructional staff who must possess both highly technical, specialized knowledge, and teaching skills. Minimum instructor qualifications are a Masters degree in technical education and/or at least five years of documented work experience in their teaching specialty. The successful instructor will have a positive attitude and deal realistically with materials relevant to the wide range of abilities and the needs of his students as well as those of industry. Every

instructor should be flexible and develop a climate in which effective learning can take place. Kopelke and Koch (8:14-18) discusses the role of instructors in serving the students. Their concern centers on the instructor's ability to teach students. They state:

> .....his ability to start where the student is, are critical requisites to the success of the group of people who, prior to the advent of the community college concept, had little or no hope of coping with the increasing educational demands of our society.

OCCUPATIONAL EMPLOYMENT OPPORTUNITIES FOR TECHNICIANS

Employment opportunities, within the State of Florida, seems to be readily available for the graduating two year technician. In 1971, the Florida Department of Education(6:8)conducted a survey which documented the need for engineering technicians through 1972. Because of the great need in critical areas, such as building construction, (see table 1, page 6) one can expect the demand to continue for years to come. Goldstein (8:22) illustrates the shortage of technicians when he projects a need for, "15.5 million industrial oriented professional workers through 1980."

CHARACTERISTICS OF BACHELOR OF ENGINEERING TECHNOLOGY PROGRAMS

Bachelor of Engineering Technology programs, while being a recent advent within the university curriculums, are considered by this author to be a positive alternative to traditional engineering programs. Leavitt(12:4) suggests there are several reasons for the development of BET programs and indicates why they appear to be currently popular with students:

1. Graduates of most technical level programs do not possess the bachelor's degree.
2. The employment level of technical program graduates are generally considered as less than professional in the job hierarchy.
3. Earning a baccalaureate degree should increase the opportunity for positive recognition from engineering societies and industry.
4. Individual productivity can be increased because of additional skill and knowledge that has been attained.
5. A very short supply of technical manpower is projected into 1980.

TABLE 1

TECHNICIAN MANPOWER SURVEY

The 1971 Technician Manpower Survey was conducted by the Florida Department of Education to determine the number of technicians employed and the number of additional technicians needed in fourteen selected technologies. This survey was developed pursuant to the recommendations and with the assistance of the State Advisory Committee for Technical Education.

SUMMARY OF SURVEY RESULTS

Technicians	Number of Technicians Employed At Time of Survey	Number of Technicians Needed to Fill Existing Vacancies At Time Of Survey	Number of Additional Technicians (Excluding Existing Vacancies) Needed During 1972	Total Number of Additional Technicians Needed During 1972	Percent Increase Estimated During 1972
Aerospace (Pilot)	5,233	38	93	131	2%
Air Conditioning, Heating and Refrigeration	1,909	186	308	494	3%
Architectural	773	83	94	177	22%
Building Construction	12,681	581	978	1,559	12%
Civil Engineering	1,502	158	301	459	30%
Drafting and Design	4,520	254	562	816	18%
Electromechanical	2,258	94	208	302	13%
Electronic Data Processing	2,420	82	168	250	10%
Electronics	10,097	235	989	1,224	12%
Environmental Pollution Control	191	27	81	108	56%
Fire Science	32	2	4	6	19%
Marine Science	75	1	6	7	9%
Mechanical Engineering	1,401	70	160	230	16%
Police Science	1,005	84	78	162	16%
TOTAL	44,097	1,895	4,030	5,925	13%

A review of BET programs offered by Florida universities reveal that both two-plus-two and four year engineering technology programs are available. The most common focus of BET programs is in industrial related disciplines such as Civil, Electrical, Mechanical, and industrial technologies, along with an emphasis on the development of managerial skills.

CONTRASTING ENGINEERS AND ENGINEERING TECHNOLOGISTS PROGRAMS

Traditionally, engineering colleges have dedicated themselves to the preparation of the professional engineer who is thoroughly grounded in the basic sciences, mathematics and the application of engineering principles to machines, structures and circuits. The typical engineering technology curriculum emphasizes the apolied sciences and their application to engineering concepts and principles. In Figure 2, Griffith (9) illustrates the difference in academic and applied curriculum preparation for the engineer and engineering technologist.

FIGURE 1: Contrast between curriculum preparation of engineers and engineering technologist

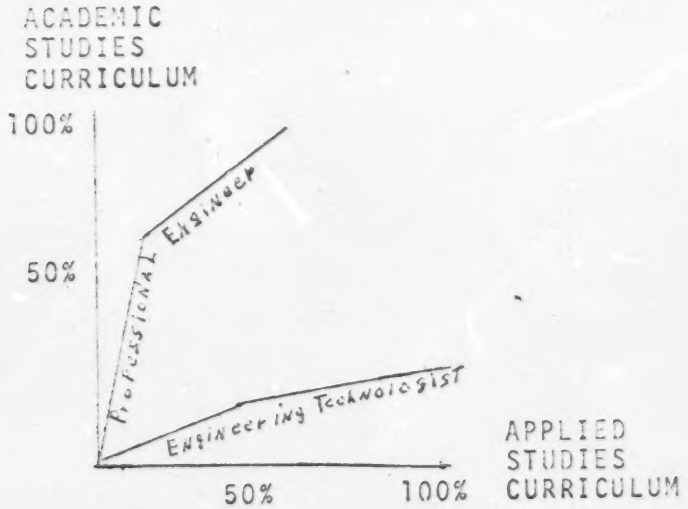
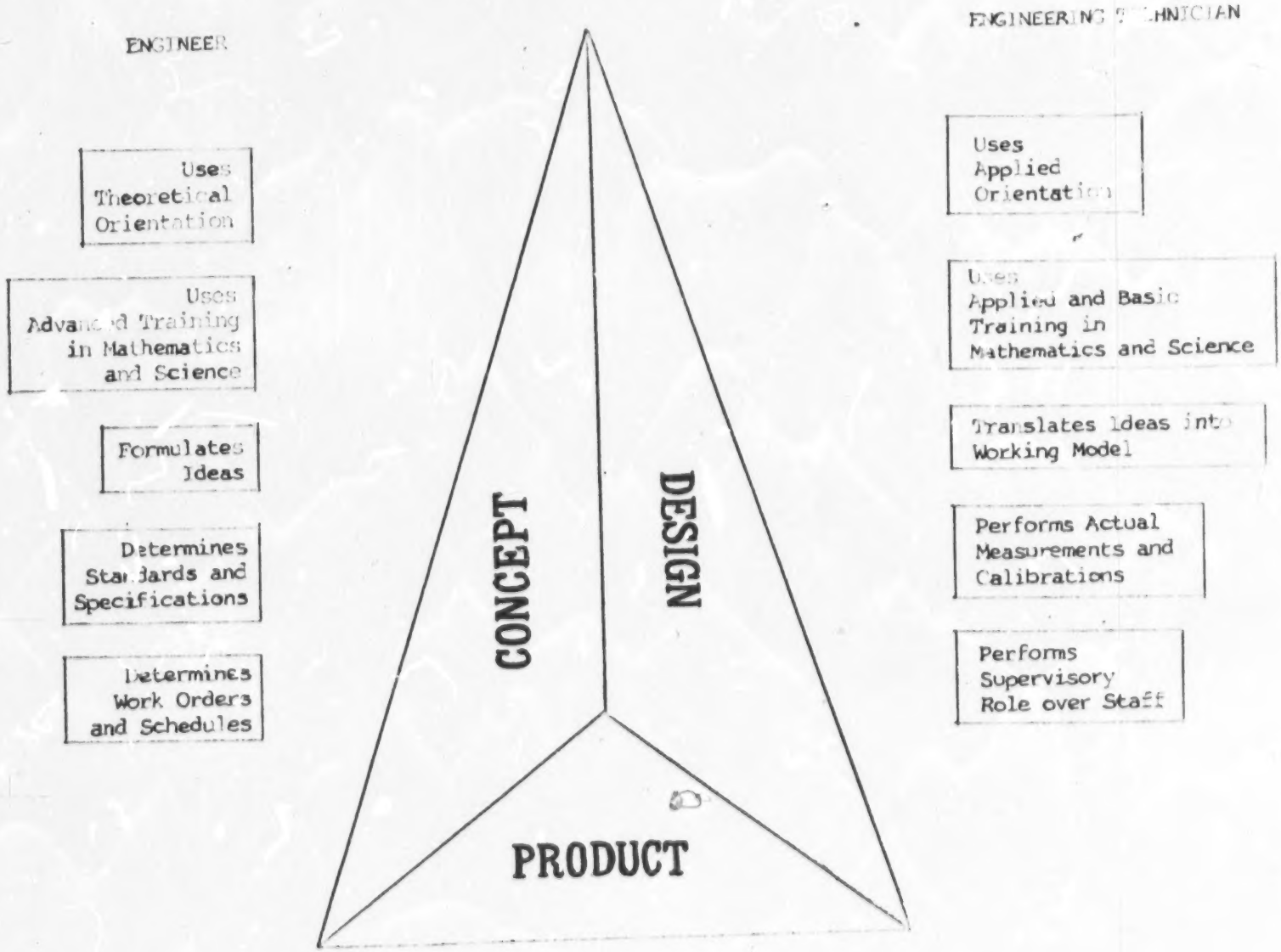
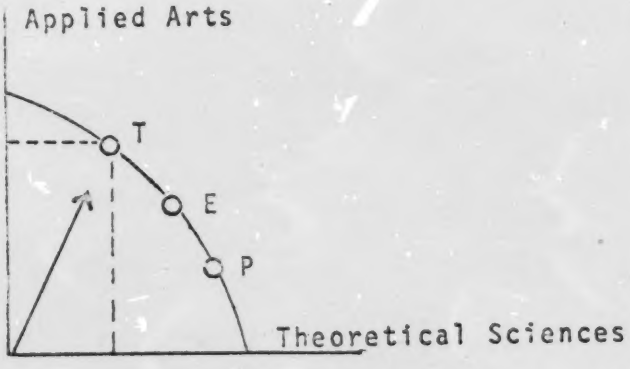


FIGURE 2:
COMPARISON OF FUNCTIONS OF THE ENGINEER & ENGINEERING TECHNICIAN



Every graduate of a two year engineering technician program should be aware of a raging controversy that appears to be taking place now between educational spokesmen from both engineering and engineering technology programs. Some have suggested the development of an "identity crisis" due to the similarity of educational training within each program. In an effort to offer a new approach to this problem, Engelsen (5:6) states, "A major reason for this problem is the 'pathology of definition' which traditionally places the technician in a sandwich between the engineer and the craftsman." His concern is that programs which offer equal degrees be considered as separate and equal. He illustrates this concept with Figure 3 below showing a two dimensional vector space. The direction of the vector points to separate occupational (T - technology, E - engineering and P - physics) areas of the spectrum.

FIGURE 3



Jaw Forrester (7:974) in an article, "Engineering in the Year 2000," pleads for converting all engineering to Engineering Science. Likewise, Arthur Hansen (10:401) in "New Thrusts in Engineering Education," makes an equally strong case for a return to Applied Engineering. However, the two year technician graduate

can feel some encouragement from McCollom and Lohmann who put the present situation in perspective when they indicate:

> Those who appear to be most concerned about the "identity crisis" are engineering and engineering technology educators and the state licensing boards and the technical-professional societies which attempt to protect the integrity of the engineering profession. Those who appear to be less concerned are employers of engineers and technologists, potential students, high school guidance counselors, recent graduates of both programs, and the general public.

It would appear to this author that the raging controversy between Engineers and Engineering Technologists will continue for years to come. The impact of this debate, for the two year graduate of technician programs, will be the fact that traditional engineering programs, at the university level, will be somewhat restrictive and will view them as under qualified to enter such programs. However, it is very likely that the two year technician and four year technology graduate will find themselves just as attractive and employable to industry as they have in recent years.

Like many controversies, a major discussion took place concerning who would employ the two year engineering technician or the engineering technologist when a professional engineer was available. University professors and industrial members of the conference responded that the technician and technologist were really more versatile and in a declining economy would probably be the more employable. There is other evidence to support this response.

A recent survey by the College Placement Council (1) indicates that 1973 job offers for engineering technology program bachelor degree candidates were not equal to those of professional engineering candidates. However, the average salary for technicians was near that of the professional engineering graduate. On the local level, (4) 1972 graduates from BCC Technology Programs had several job offers from which to select. However, many of these job offers were from outside the Brevard County area. The average salary was near $1,000 per month. According to Griffith (9), in 1973, graduates from FTU engineering technology programs had a salary range of $10,500 to $15,200.

PROCEDURES THAT AFFECT BREVARD COMMUNITY COLLEGE TECHNOLOGY PROGRAM STUDENTS

COUNSELOR ASSIGNMENTS: At the present time, BCC Counseling Staff has decentralized advisement responsibilities and are housed in the various academic divisions and buildings on the campus. This arrangement allows the counselor to become totally familiar with each major discipline of study within his assigned responsibilities--thus giving each student opportunity to discuss his career and educational plans with a specialist who is thoroughly familiar with what is happening within a given career field. Each student is counseled in terms of his personal strengths and goals. No effort is made to "sell" a student on any particular program or major field of study. Counselors encourage students to accept responsibility for their own educational and career decisions. Every student is encouraged to be aware of and prepare a career ladder that has sufficient vertical and horizontal mobility to secure his educational and career goals.

ADVISEMENT PROCEDURES: Current college procedures require all new students to see a professional counselor before registering for classes. Any returning student may register for a maximum of sixteen credits without seeing a counselor or faculty advisor. However, students registering for more than sixteen credits must have seen their assigned counselor. Faculty advisors are very helpful with the initial placement of technical students who have previous educational or work experience in their area of study.

TESTING: At the present time students who are over the age of twenty-two are not required to participate in advisement testing. However, students interested in earning advanced placement may take the CLEP tests and/or credit by examination.

DIFFICULTIES WITH CLASS SCHEDULING: Occasionally a student will have his progress interrupted when their program classes have to be cancelled due to insufficient enrollment, lack of a qualified instructor or a lack of funds. Other students may be inconvenienced when their required classes are scheduled at times which they cannot attend, such as nights only, or days only. Some students find themselves out of phase when they attempt to start their technical program at times other than the fall semester and realize that critical prerequisites are not available.

DUAL ENROLLMENT AGREEMENT WITH FTU: Effective February 6, 1974, students who are enrolled full-time at BCC may also take a maximum of six credits at FTU on a tuition free basis. The reverse is true for FTU students. This agreement will allow the BCC student more freedom to pursue his educational and career goals. Equally important, this agreement marks a high point of cooperation between these two institutions of higher education and demonstrates a vital commitment to operate in the best interest of students.

GRADUATION PROCEDURES: During the semester that a student completes his programs of study he is required to (if he wishes to qualify for graduation) have his grade record reviewed or evaluated for graduation. In those cases where program adjustments are required the division chairman has exercised the authority to recommend that appropriate course substitutions or waivers be granted. The majority of program adjustments occur because applied technical classes are not available and the students have already taken an equivalent general education class.

DUAL DEGREES: A student may earn dual degrees, both the Associate of Arts and Associate of Science degree with satisfactory completion of at least twelve appropriate additional credit hours beyond the Associate of Arts degree. However, few students can manage both degrees within the minimum standards.

ASSUMPTIONS

This study is guided by the following assumptions:

1. Community college technical program students have potential future plans in mind as they progress through college.

2. Students can verbalize long range plans that are relatively stable and generally realistic in terms of student perceptions.

3. Every student's alternative to "begin work" or to "continue on with educational endeavors" is real at any given time and his decision will be a reflection of where each student is during this moment of his life.

4. Brevard Community College should periodically sample student perceptions of future educational and career alternatives so that curriculum and procedures can be adjusted in the best interests of the students.

LIMITATIONS

This study is limited to an assessment of future plans of those technical program students who are enrolled in Brevard Community College during the August-December term of 1973. It is understandable that future student educational-career plans must be considered as tentative, yet certainly within the range of reality and accomplishment. Recognition that any absolutes which exist within an educational institution are few, is an appropriate attitude for reviewing college procedures and suggesting recommendations which are derived from this study.

PROCEDURES

Construction of the survey instrument appeared at first to be a formidable task because the student sample contained both youthful and adult students. Voelkner (15:29) offered three guidelines

which simplified the process considerably. Those guidelines are:

a. Write out objectives that define the problem
b. Write questionnaire items to follow the objectives
c. Analyze questionnaire items in light of objectives

Using this approach an overall goal for this study was stated as: "To determine future educational and career plans of technical program students." The final draft of objectives covered two areas and consisted of the seven short objective statements listed below:

Part A: (all students respond)
Objective statements
1. determine program status for each student
2. determine future student plans for:
   a. seeking employment only
   b. seeking part-time employment and continue college
   c. continue with college on full-time basis

Part B: (only students who plan to enter FTU, BET Program respond)
3. determine students area of interest in the BET program
4. determine if student would be inclined to enroll in BET core classes if they were held on the Cocoa campus
5. determine student preference for attending core classes (day or night), if core classes were held on Cocoa campus
6. determine student preference for taking all BET course work on the FTU main campus in Orlando, Florida
7. determine student interest for participating in the cooperative education program while attending FTU

A supply-type questionnaire was considered to be most appropriate for this study because it would allow each student to check or write a short answer and will give an objective format for the questionnaire.

Initially, twenty specific items were formulated and a prototype survey form was constructed. This instrument was tested for reliability by having five college students read and give their verbal interpretation of each item. No item was considered reliable until each of the five students gave similar interpretations (12:3). Content validity of each item was established by the students, based on relevance of that item to the content of the objective to be measured (11:463). As a result of these tests the final

survey form was reduced to thirteen items. The final document was considered useable when it could be produced at minimum cost, completed within five minutes and the resulting data could be objectively scored and analyzed.

Administration of the survey was facilitated by full cooperation of the technical faculty members. Each instructor was given a supply of survey forms and asked to administer them to his classes. All survey forms were completed and returned to this author within a two day time period.

TREATMENT OF DATA

The structure and purpose of this study seemed to allow the data from this survey to be treated in two steps. Step one consisted of tabulating and totaling the response of each student to each item on the questionnaire. Step two consisted of computing the percentage of respondents for each item and summarizing the data so that a clear perspective could be gained for analyzing the educational and career plans of these students in the sample.

SUMMARY OF DATA AND RECOMMENDATIONS

TABLE 2: Summary results of questionnaire

Part A

Item 1 - A total of 223 (119 Freshmen and 104 Sophomores) responded to the questionnaire. A total of 136 indicated plans to earn an AS degree by the following dates:

58%

12/73 = 6
5/74 = 29
8/74 = 19
12/74 = 10
5/75 = 25
8/75 = 45
12/75 = 2

Item 2 - 218 indicated their future plans after earning the AS degree as:

39% 86 - seek employment only
34% 73 - seek employment part-time and continue college
27% 59 - attend college full-time

The remaining portion of the questionnaire was to be completed only by those students who plan to enter FTU's Bachelor of Engineering Technology degree program. 63, or 28% of these students, checked the items in this section. Their responses are as follows.

Table 2 (cont.)

Part B

Item 3 - Intended Major

14%	9	(a) Design Technology
28%	16	(b) Electronics Technology
12%	8	(c) Environmental Control Technology
2%	1	(d) Operations Technology
44%	29	(e) Undecided

Item 4 - (check yes or no) I would enroll in the junior-senior level core courses for the Bachelor of Engineering Technology degree if they were offered on the Cocoa Campus -

57 Yes	6 No
91%	9%

Item 5 - (check best answers for you) If FTU core classes were available on the Cocoa Campus, then I probably would attend only:

8%	6 part-time days
30%	18 part-time night
54%	33 full-time day
8%	6 full-time night

Item 6 - (check yes or no) I would prefer to take all junior-senior class work for the Bachelor of Engineering Technology degree at the Orlando main campus.

12 Yes	45 No
29%	71%

Item 7 - (check yes or no) I would be interested in learning more about FTU Cooperative Education Program so that I might earn while I learn.

44 Yes	15 No
70%	30%

CONCLUSIONS

Three obvious conclusions can be drawn from this study. First, almost sixty percent of those sampled plan to earn an Associate of Science degree. Second, forty percent plan to go into direct employment. Third, twenty-eight percent indicated an interest in FTU and the BET degree.

Of those sampled who indicated an interest in attending FTU, several questions should be asked. First, is twenty-eight percent a high or low level of interest? This author concludes that it is a high level of interest when one considers such facts as the general age of those sampled, and their employment and family status being such that it is extremely difficult to participate in any other BET program. Second, is forty-six percent of those interested in FTU BET programs really undecided? This author concludes that the answer to this question is yes because the FTU BET program has only been in existance one full semester at the time of this survey. Third, can a FTU BET program be established at the FTU Resident Center on the Cocoa Campus and expect sufficient student enrollment to justify such a program? Again, in the opinion of this author, the answer is yes, because of consideration for the above factors which limit the technical students' mobility.

RECOMMENDATIONS

As a result of this study several recommendations can be offered which, in the judgement of this author, will facilitate the transition of students who choose to pursue employment opportunities or continued educational endeavors:

1. Because many technical program students have years of work experience, instructors should be encouraged to utilize a systems approach in their teaching. Absolute accuracy in the placement of students within any program is almost impossible even with the most expert of counseling services. Therefore, instructors are urged to continue utilization of pre and post-testing techniques that allow students to demonstrate proficiency in a given class or discipline.

2. Because smooth and consistant progress in completing a technical program is expected by both the staff and student, it is recommended that all prerequisite classes be offered every term so that students who enter at times other than the fall term will have no opportunity to find themselves out of phase. A greater utilization of independent study privileges should be offered in those cases where students have difficulty obtaining an adequate schedule of classes. Independent study can be a satisfactory learning experience if undertaken within structured guidelines (see appendix for such guidelines).

3. Completion of a chosen technical program is a major motivating force for most students. Frustration levels tend to rise when required classes are not available at times convenient to students. It is recommended that every effort be made to consider student needs when only day or only night sections of classes are scheduled. Due to the high number of classes that are cancelled each term it is also recommended that a list of "equivalent course substitutions" be developed and publicized for staff and student information. This would allow the student and his faculty advisor to monitor progress toward graduation without fear of being short credits and being forced to spend an additonal semester at BCC (see appendix for list of equivalent classes for applied and general education classes).

4. A student may earn both an Associate of Arts and an Associate of Science degree providing he has completed at least twelve appropriate credits beyond the Associate of Arts degree. Few students are able to plan their programs to fit this minimum requirement. It is suggested that consideration be given to the awarding of another degree, entitled the Associate of Science in General Technology, for those students who may desire both degrees but do not have the time or do not need to pursue a specific technology in great depth. A draft proposal for such a degree has been formulated and is included in the appendix of this paper.

5. A greater effort should be made to implement the Cooperative Education Program which can provide needed work experience and financial support for technical students. In addition, it will provide a sound basis for future career decisions.

6. It is apparent, with forty-six percent of those sixty-three students who showed an interest in FTU and the BET program indicating that they were undecided as to what their major would be, that a need exists for greater amounts of BET information to be made available to BCC students. It is recommended that opportunities be arranged for FTU advisors to talk with BCC students on a regular basis and to do so on the BCC campus.

7. It is apparent, with twenty-eight percent of those sampled indicating a desire to attend FTU and participate in the BET program, that the establishment of a BET class on the Cocoa Campus should be studied. This is further emphasized when seventy-one percent indicated a preference not to attend the main FTU campus in Orlando. The establishment of a BET program on the Cocoa campus has a possibility of attracting greater numbers of students to BCC technical programs because of the opportunity to complete a four year degree without leaving the community.

CHANGES RESULTING FROM THIS STUDY

Several significant institutional changes have taken place as a result of data acquired in this study. First, as a direct result of this study, data was made available so that the administrative staff of the FTU Resident Center could see the level of BCC student interest in their BET programs. With his use of this data, Dr. Anthony Tesori, Director of the FTU Resident Center, was successful in arranging for the junior year core courses of the BET program to be offered on the BCC campus beginning in September 1974. Plans to continue with the senior year core courses are being formulated if the target of twenty-five students can be achieved by September 1974.

Second, several meetings were initiated by this author with Dr. Tesori to discuss institutional cooperation for the sharing of facilities, instructors and common courses which would make student transition a smooth experience. High administrative officials from both institutions responded and the cementing of a positive cooperative atmosphere seems to have occurred with the common goal of service to the student appearing as the prime motivator.

Third, this author created a list of equivalent courses, "Alternative Option Subjects," which might be considered as free substitutions for those applied and general education curriculum requirements listed in technical programs. Since the acceptance of this list, there has been a noticeable reduction in the anxiety level of graduating students and their concern for being able to meet program requirements for graduation.

Fourth, this author has proposed a draft document outlining suggested guidelines for awarding an Associate of Science degree in General Technology. No formal action has been taken on this proposal as of this writing. However, such decisions must be thoroughly studied before they are institutionalized.

It is appropriate to comment on three items that have been discussed in this paper and present an update of information as to their status after June 12, 1974, which was the target date for completion of this practicum. First, due to great student interest and cooperative effort between BCC and FTU, the initial class of FTU BET students to enroll in the BCC campus FTU Resident Center beginning in September, 1974, totals thirty-seven rather than the target number of twenty-five. Second, the BCC Cooperative Education Program has become a reality and technical students, who appear in great demand, also compose the largest block of participants. Third, independent study programs have been implemented for at least fifteen students who would otherwise have had their educational plans disrupted.

The submission of this paper was delayed due to the desire of this author to include relevant experiences gained as a result of his participation in an International Symposium on Dual Programs entitled, "Engineering Technology and Engineering -- An Identity Crisis." This Symposium was hosted by Florida International University of Miami, Florida, on November 10-13, 1974.

Attendance at this Symposium has reinforced the impression that many university engineering educators have not fully accepted the two year technician program or the four year Bachelor of Engineering Technology Program as a legitimate part of engineering studies.

The fact that a controversy between the two disciplines is currently raging, will certainly have an impact on the Associate of Science degree students at Brevard Community College as they strive to enter employment or continue on with educational endeavors. While the controversy remains "academic" at the present time, it is obvious to this author that many technology students will be denied access to traditional engineering studies and societies because of their choice of educational programs. However, one positive aspect of the situation is that industry is tuned to the standard of "individual worth" as demonstrated by actual performance and does not seem to be placing artificial barriers in the path of this new category of professionals.

It is equally appropriate to indicate here that this author gained significant growth experiences as a result of participation in what he considers to be a successful practicum. First, he gained a greater awareness of student perspectives as they formulate their educational and career plans. Second, much insight and satisfactions were gained as he worked with FTU representatives in preparing for the establishment of the new BET program for the BCC campus. To realize that one has played an active but small part in creating a program that has been received with positive and enthusiastic student response, is very rewarding. Third, the understandings of "process" has had a significant impact on this author. The realization that in order to implement one's idea he will have to get within "the frame of reference" of his colleagues came with dramatic suddenness. The ultimate in learning which occurred on the part of this writer can be simply stated. When dealing with policy and procedural changes within the institution there is probably no such thing as the implementation of a pure idea. Every proposal is reviewed, analyzed, and modified, then accepted or rejected depending on relevancy to the real or imagined conditions of the situation under study. Yes, it is accurate to say that this practicum has provided this author with several growth experiences.

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